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An overview of fishes of Dhule and Nandurbar districts, Maharashtra, India

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Abstract

The freshwater fish fauna of Dhule and Nandurbar districts were studied during the period 2013-14. A total of 43 fish species belonging to 8 orders, 16 families and 36 genera were reported from the present study. Out of the 43 reported species, 13 species reported only from Nandurbar district and 11 species from Dhule district. Nineteen species are common to both the districts. The report of *Parambassis lala* is the first record of this species from Maharashtra State. The fish fauna is threatened due to invasive alien species as well as anthropogenic activities such as overfishing, sand mining, siltation, organic and inorganic pollution. Hence, it is necessary to implement stringent conservation measures to protect the precious ichthyofaunal wealth.

Keywords: Fish fauna, Dhule, Nandurbar, Invasive species, *Parambassis lala*

Introduction

Very few studies are available on the fish fauna of Dhule district. Singh (1990) recorded 26 species while Patole and Patil (2009) recorded 25 species from Panjhra river. Subsequently, Patole and More (2010) and Patole (2010) reported 31 species and 21 species from Sakri tahsil and Kan and Burai rivers of Sakri, District Dhule respectively. No reports on Ichthyodiversity of Nandurbar district are available as per our knowledge. In the present study, attempt has been made to document the fish fauna of Nandurbar and Dhule district, Maharashtra based upon surveys made by first author during 2013-14.

Dhule district, formerly known as West Khandesh, belongs to Northern Maharashtra region and lies between 20°38' to 21°16' North latitude and 73°50' to 75°11' East longitudes in upper Tapi basin and on the North West of Maharashtra. The district has the ranges of Sahyadris (Western Ghats) in the West and South and Satpudas in the North. The district is surrounded by Madhya Pradesh on the North, Nandurbar district and Gujarat State on the West, Nasik district on the South and Jalgaon district towards the East. Narmada and Tapi are two major rivers flowing through the district. Barring the relatively small area of Narmada drainage of the North part, the rest of the district is comparatively drained by the Tapi and its tributaries such as Panzara, Burai, Gomai, Amravati, Aner, Bori, Kan and Jamkhedi etc. In 1998, Dhule was bifurcated and two separate districts Dhule and Nandurbar exist. Nandurbar district is bounded to the south and south-east by Dhule district, to the west and north Gujarat state, to the north and north-east Madhya Pradesh. It lies between 21°00' to 22°03' North latitude and 73°31' to 74°32' East longitudes.

Material and Methods

During the present study, twelve sampling sites were selected (Figure 1). Fishes were collected using cast nets, gill nets and traps. Samples were also collected from local markets and from local fishermen. Representative fish samples were preserved in 4% formalin. Only one or two specimens of each species were preserved. Identification was made following standard literature (Jayaram, 1991, 2006, 2010; Talwar and Jhingran, 1991). Collected fish specimens are deposited in the collections of Zoological

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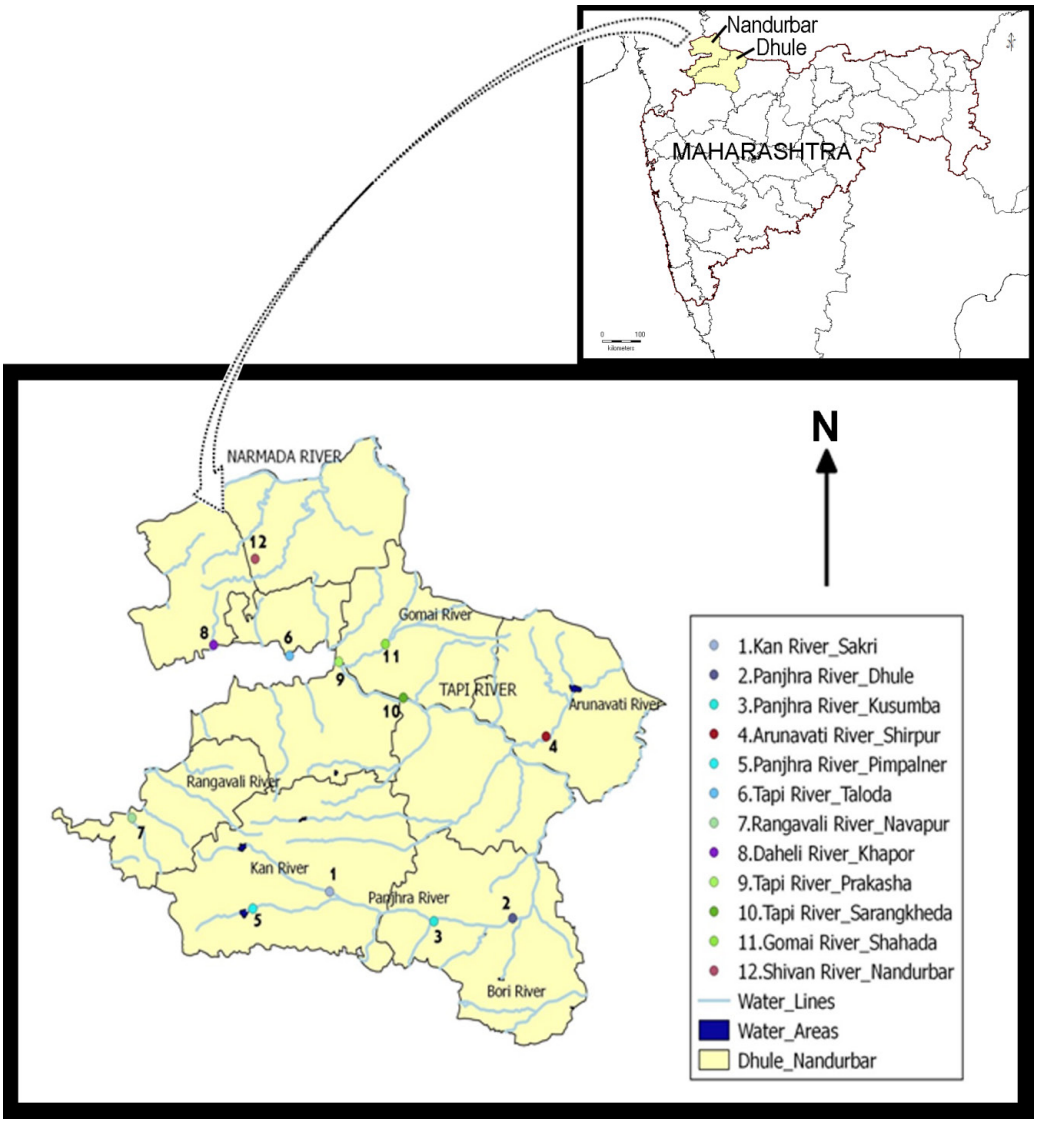

Figure 1. Dhule and Nandurbar district map showing fish collecting centres.

Survey of India, Western Regional Centre, Pune (Accession numbers ZSI, WRC, P/4120 to P/4150). The threat status of fish species was adapted from IUCN Red List of Threatened species version 2013 (IUCN 2013). The taxonomic status followed as per Eschmeyer *et al.*, (2016).

Results and Discussion

A total number of 43 fish species belonging to 8 orders, 16 families and 36 genera were resulted from the present study (Table 1). The order Cypriniformes is the most dominant group represented by 24 species followed by Perciformes 7 species and Siluriformes 6 species. Tapi river shows the maximum fish diversity (23 species) whereas Shivan, Rangavali and Daheli river showed the least number of species (3 species each). We could not record the presence of *Schismatorhynchos nukta* in the present study which was earlier recorded by Singh (1990). The occurrence of species like *Garra gotyla, Garra mcClellandi, Lepidocephalichthys guntea, Labeo pangusia, Osteobrama cotio, Tor mussullah, Catla catla, Pethia conchonius, Gambusia affinis, Rita pavimentata, Macrognathus aculeatus, Mastacembelus guentheri* and *Channa marulius* also could not be recorded. In the present study, we reported 11 new records of fish species to Dhule district namely, *Tenualosa ilisha, Cirrhinus reba, Puntius cf. amphibius, Salmostoma bacaila, Amblypharyngodon mola, Osteobrama vigorsii, Heteropneustes fossilis, Xenentodon cancila, Mystus cavasius, Sperata aor and Mastacembelus armatus*. The study also reported two new records

of introduced species namely *Cyprinus carpio* and *Hypothalmichthys nobilis*. In the present study, the introduced species *Oreochromis mossambicus* reported by earlier workers was collected from Arunavati river. Fishes like *Labeo rohita* and *Labeo calbasu* native to Ganges river basin were introduced in large numbers for aquaculture practices. The introduction of alien species cause serious threat to native fish fauna with regard to competition for food, predation. (Daniels, 2006, Raghavan *et al.*, 2008; Knight, 2010). *Puntius cf. amphibius* recorded in the present study has ambiguous taxonomic status and needs to reinvestigate from its type locality (Pethiyagoda and Kottelat, 2005). Out of the 43 recorded fish species, one species categorized as Endangered (EN), one Data Deficient (DD), two Near Threatened (NT) and 36 Least Concern (LC). Altogether, a total of 41 species are known to occur in Dhule district based on all reports, in the present study thirty two species were recorded from Nandurbar district.

Out of the 43 reported species, 13 species reported only from Nandurbar district and 11 species from Dhule district. Ninteen species are common to both the districts. Most of the species reported here have a wide distribution. The report of *Parambassis lala* is the first record of this species from Maharashtra State (Jadhav *et al.*, In Press). This species is reported from Tapi river near Taloda, district Nandurbar alongwith *Chanda nama* and *Parambassis ranga*. The species *Clupisoma garua* earlier reported from Dhule district by Patole and More (2010) is now been recorded from Tapi river, Taloda, district Nandurbar. Hitherto, this species is known to occur in Maharashtra from Dhule and Nandurbar districts only.

The fish fauna of Dhule and Nandurbar districts are diverse. However, this rich ichthyofauna is threatened due to various factors such as introduction of exotic fish species, over fishing, sand mining, deforestation. Hence, it is necessary to implement stringent conservation measures to protect the precious ichthyofaunal wealth of Dhule and Nandurbar districts.

Table 1. List of Fish species recorded from Dhule and Nandurbar districts, Maharashtra in the present study

Order/Family/Species	A	B	C	D	E	F	G	H	Dhule Dist.	Nandurbar Dist.	IUCN redlist Status	Remark
Osteoglossiformes												
Notopteridae												
Notopterus notopterus (Pallas, 1769)							+		+		LC	
Clupeiformes												
Clupeidae												
Tenualosa ilisha (Hamilton, 1822)					+		+		+	+	LC	J
Cypriniformes												
Cyprinidae												
Cirrhinus reba (Hamilton, 1822)					+		+	+	+	+	LC	J
Crossocheilus latius (Hamilton, 1822)			+	+					+	+	LC	
Cyprinus carpio Linnaeus, 1758					+		+		+	+	EX	I
Devario aequipinnatus (McClelland, 1839)				+						+	LC	
Garra mullya (Sykes, 1839)				+			+		+	+	LC	
Labeo boggut (Sykes, 1839)			+		+		+		+	+	LC	
Labeo calbasu (Hamilton, 1822)					+					+	LC	J
Labeo rohita (Hamilton, 1822)			+		+		+		+	+	LC	I
Tor khudree (Sykes, 1839)			+			+			+	+	EN	
Puntius cf. amphibius (Valenciennes, 1842)		+	+	+					+	+	DD	J
Systomus sarana (Hamilton, 1822)	+		+		+		+		+	+	LC	
Puntius sophore (Hamilton, 1822)		+	+		+	+			+	+	LC	
Pethia ticto (Hamilton, 1822)			+		+				+	+	LC	
Rasbora daniconius (Hamilton, 1822)	+				+		+		+	+	LC	
Salmostoma balookee (Sykes, 1839)					+					+	LC	
Salmostoma bacaila (Hamilton, 1822)	+				+				+	+	LC	J

Amblypharyngodon mola (Hamilton, 1822)					+					+	LC	J
Barilius bendelisis (Hamilton, 1807)					+		+		+	+	LC	
Osteobrama vigorsii (Sykes, 1839)								+		+	LC	J
Hypothalmichthys nobilis (Richardson, 1845)			+						+		EX	I
Nemacheilidae												
Paracanthocobitis botia (Hamilton, 1822)							+		+		LC	
Indoreonectes evezardi (Day, 1872)	+						+		+		LC	
Schistura denisoni (Day, 1867)						+				+	LC	
Cobitidae												
Lepidocephalichthys thermalis (Valenciennes, 1846)					+					+	LC	
Siluriformes												
Bagridae												
Mystus bleekeri (Day, 1877)	+						+		+		LC	
Mystus cavasius (Hamilton, 1822)							+		+		LC	J
Sperata aor (Hamilton, 1822)					+					+	LC	J
Siluridae												
Ompok bimaculatus (Bloch, 1794)							+		+		NT	
Schilbidae												
Clupisoma garua (Hamilton, 1822)					+		+		+	+	LC	
Heteropneustidae												
Heteropneustes fossilis (Bloch, 1794)		+								+	LC	
Beloniformes												
Belonidae												
Xenentodon cancila (Hamilton, 1822)					+					+	LC	J
Cyprinodontiformes												
Aplocheilidae												
Aplocheilus lineatus (Valenciennes, 1846)			+						+		LC	
Perciformes												
Cichlidae												
Oreochromis mossambicus (Peters, 1852)							+		+		EX	I
Gobiidae												
Glossogobius giuris (Hamilton, 1822)							+		+		LC	
Channidae												
Channa gachua (Hamilton, 1822)				+	+					+	LC	
Channa punctata (Bloch, 1793)	+		+					+	+	+	LC	
Ambassidae												
Chanda nama Hamilton, 1822					+					+	LC	
Parambassis ranga (Hamilton, 1822)			+		+				+	+	LC	
Parambassis lala (Hamilton, 1822)					+					+	NT	K
Synbranchiformes												
Mastacembelidae												
Mastacembelus armatus (Lacepede, 1800)	+				+				+	+	LC	J
Macrognathus pancalus Hamilton, 1822	+								+		LC	

Collection sites: A- Kan river, Sakri, Dist. Dhule; B-Shivan river, Nandurbar; C- Panjhara river (Kusumbe village, Tal. & Dist. Dhule; Pimpalner, Dist. Dhule); D-Gomai river, Shahada, Dist. Nandurbar; E- Tapi river (Sarangkheda, Prakasha, Taloda, Dist. Nandurbar); F-Rangavali river, Navapur, Dist. Nandurbar; G- Arunavati river, Shirpur, Dist.Dhule; H- Daheli river, Khapor village, Akkalkuva, Dist.Nandurbar; + indicates present

LC- Least Concern, DD- Data Deficient, NT- Near Threatened, EN-Endangered, EX-Exotic

I- Introduced to the region, J-New Record to Dhule district, K-New Record to Maharashtra State

Summary

The present study records 43 species belonging to 8 orders, 16 families and 36 genera from Dhule and Nandurbar districts, Maharashtra. Of which, 41 species recorded from Dhule district and 32 species from Nandurbar district. *Parambassis lala* reported during the present study is the first record from Maharashtra State.

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